

WE CLAIM:

Sub A' 7 1. A system for load balancing in a network environment comprising:

a plurality of servers coupled to a network;

5 a set of network resources associated with each of the servers, wherein at least some of the network resources are redundant;

a client coupled to the network and generating a request specifying some of the redundant resources;

10 a gateway machine coupled to the network in communication with the client, the gateway machine configured to receive the request from the client, select from amongst the servers that are associated with the request-specified redundant services, establish a  
15 communication channel with the selected server, and access the specified server to service the received client request; and

means coupled to the gateway machine for selecting amongst servers of redundant resources a particular  
20 server for a received request so as to balance load amongst the servers providing redundant resources.

2. The system of claim 1 further comprising means within the gateway machine for selecting amongst a plurality of channels between the gateway machine and the servers associated with the network resources specified  
5 by the client request.

3. The system of claim 1 wherein at least some of the plurality of servers comprise world wide web servers.

4. The system of claim 3 wherein the client comprises a web browser.

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5. The system of claim 1 wherein each of the plurality of servers is associated with a network address and the gateway machine comprises a web server having a network address distinct from the plurality of servers.

6. The system of claim 1 wherein the network comprises the Internet.

7. The system of claim 1 further comprising means for monitoring quality of service between the gateway and each of the servers.

8. The system of claim 7 wherein the means for monitoring quality of service is implemented within the gateway machine.

9. The system of claim 7 further comprising means for selecting from amongst the servers providing redundant services using the relative quality of service between the servers.

10. The system of claim 7 further comprising:

means for allocating an additional server with redundant services in response to the quality of service falling below a preselected level, wherein the gateway machine is configured to establish a new communication channel through the network with the additional server.

11. The system of claim 1 wherein the gateway machine further comprises:

a means for generating a response to the client request using services provided to the gateway machine by the servers.

12. A method for load balancing in a network environment comprising:

providing a communication network;

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5 providing a plurality of servers coupled to the  
network wherein at least some of the servers provide  
redundant services;

generating a request for a redundant service in a  
network-coupled client machine;

10 directing the request to a network-coupled gateway  
machine;

causing the gateway machine to select amongst  
servers providing the redundant services a particular  
server for the received request so as to balance load  
amongst the plurality of servers providing the redundant  
15 services; and

after selecting a particular server, causing the  
gateway machine to generate a request to the selected  
server for the specified resources.

13 The method of claim 12 selecting amongst a  
plurality of channels between the gateway machine and the  
servers of redundant services specified by the client  
request.

14. The method of claim 12 wherein at least some of  
the plurality of servers comprise world wide web servers  
and the client comprises a web browser.

15. The method of claim 12 wherein the network  
comprises the Internet.

16. The method of claim 12 further comprising  
monitoring quality of service between the gateway and  
each of the servers.

17. The method of claim 16 further comprising  
selecting from amongst the servers providing redundant  
services using the relative quality of service between  
the servers.

項目	単位	1990年	1991年	1992年	1993年	1994年	1995年	1996年	1997年	1998年	1999年	2000年	2001年	2002年	2003年	2004年	2005年	2006年	2007年	2008年	2009年	2010年	2011年	2012年	2013年	2014年	2015年	2016年	2017年	2018年	2019年	2020年	2021年	2022年	2023年	2024年	2025年	2026年	2027年	2028年	2029年	2030年	2031年	2032年	2033年	2034年	2035年	2036年	2037年	2038年	2039年	2040年	2041年	2042年	2043年	2044年	2045年	2046年	2047年	2048年	2049年	2050年	2051年	2052年	2053年	2054年	2055年	2056年	2057年	2058年	2059年	2060年	2061年	2062年	2063年	2064年	2065年	2066年	2067年	2068年	2069年	2070年	2071年	2072年	2073年	2074年	2075年	2076年	2077年	2078年	2079年	2080年	2081年	2082年	2083年	2084年	2085年	2086年	2087年	2088年	2089年	2090年	2091年	2092年	2093年	2094年	2095年	2096年	2097年	2098年	2099年	2100年																																																																		
総人口	人	12,542,000	12,642,000	12,742,000	12,842,000	12,942,000	13,042,000	13,142,000	13,242,000	13,342,000	13,442,000	13,542,000	13,642,000	13,742,000	13,842,000	13,942,000	14,042,000	14,142,000	14,242,000	14,342,000	14,442,000	14,542,000	14,642,000	14,742,000	14,842,000	14,942,000	15,042,000	15,142,000	15,242,000	15,342,000	15,442,000	15,542,000	15,642,000	15,742,000	15,842,000	15,942,000	16,042,000	16,142,000	16,242,000	16,342,000	16,442,000	16,542,000	16,642,000	16,742,000	16,842,000	16,942,000	17,042,000	17,142,000	17,242,000	17,342,000	17,442,000	17,542,000	17,642,000	17,742,000	17,842,000	17,942,000	18,042,000	18,142,000	18,242,000	18,342,000	18,442,000	18,542,000	18,642,000	18,742,000	18,842,000	18,942,000	19,042,000	19,142,000	19,242,000	19,342,000	19,442,000	19,542,000	19,642,000	19,742,000	19,842,000	19,942,000	20,042,000	20,142,000	20,242,000	20,342,000	20,442,000	20,542,000	20,642,000	20,742,000	20,842,000	20,942,000	21,042,000	21,142,000	21,242,000	21,342,000	21,442,000	21,542,000	21,642,000	21,742,000	21,842,000	21,942,000	22,042,000	22,142,000	22,242,000	22,342,000	22,442,000	22,542,000	22,642,000	22,742,000	22,842,000	22,942,000	23,042,000	23,142,000	23,242,000	23,342,000	23,442,000	23,542,000	23,642,000	23,742,000	23,842,000	23,942,000	24,042,000	24,142,000	24,242,000	24,342,000	24,442,000	24,542,000	24,642,000	24,742,000	24,842,000	24,942,000	25,042,000	25,142,000	25,242,000	25,342,000	25,442,000	25,542,000	25,642,000	25,742,000	25,842,000	25,942,000	26,042,000	26,142,000	26,242,000	26,342,000	26,442,000	26,542,000	26,642,000	26,742,000	26,842,000	26,942,000	27,042,000	27,142,000	27,242,000	27,342,000	27,442,000	27,542,000	27,642,000	27,742,000	27,842,000	27,942,000	28,042,000	28,142,000	28,242,000	28,342,000	28,442,000	28,542,000	28,642,000	28,742,000	28,842,000	28,942,000	29,042,000	29,142,000	29,242,000	29,342,000	29,442,000	29,542,000	29,642,000	29,742,000	29,842,000	29,942,000	30,042,000	30

- 10 a queue data structure within the intermediary server, wherein the queue data structure is responsive to the means for monitoring to release requests from the queue data structure in a manner determined to improve server performance.